



## Glenn, Cleveland Clinic Unite to Benefit Community

### Partnership Brings Together Neighboring Institutions

Side by side, NASA Glenn and the Cleveland Clinic are leveraging their strengths—people, innovations, management infrastructures and community outreach for the betterment of the local and global community.

A formal partnership established last fall began quite informally, according to Director of Center Operations Robyn Gordon. “I met a schoolmate at the Cleveland Clinic and we talked about potential opportunities for leadership development between Glenn and the Clinic,” she explained. “That discussion later led to a meeting with the Clinic and evolved into a formal partnership that would span areas well beyond our initial goal.”

With hard work and the support of management from both institutions, Glenn and the Cleveland Clinic signed a Memorandum of Understanding (MOU) in October 2010. The partnership unites the two organizations to achieve the following objectives: leverage expertise and talent of both institutions for potential benefits in science, medicine, innovation and education; create an umbrella infrastructure that accommodates multiple projects; and implement a leadership development experience.



C-2003-1476



## Center Establishes Aeronautics Research Office

### Continuing a Tradition of Major Aviation Contributions

In 1941, when George Lewis, director of Aeronautical Research for NACA, broke ground for NASA Glenn's predecessor, the Aircraft Engine Research Laboratory, the goal was clear: “supervise and direct the scientific study of the problems of flight with a view to their practical solution.”

NASA Glenn (Lewis) has lived up to that goal by developing major innovations for both aviation and space. In recent months, Glenn has undergone a restructuring of the organization to continue the legacy in aeronautics and align with NASA's new direction in human spaceflight. In November 2010, Glenn established the Aeronautics Research Office (ARO), Code K, in support of the agency's efforts to create a next-generation transportation system that will meet the challenges of the 21st century.

The new office serves as the focal point for the center's aeronautics research and provides project management, leadership and oversight in support of the Aeronautics Research Mission Directorate (ARMD) at Headquarters. Dr. Marla Pérez-Davis has been named director of the ARO, with responsibility for integrating

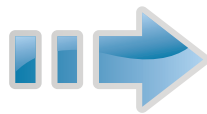
Tom Spicer, chief of the Human Capital Development Branch, who oversees the logistics of the partnership, said the MOU opened the door to establishing a Glenn and Cleveland Clinic Partnership Model. This includes a governance structure and focuses on four areas, known as pillars/committees, in which to collaborate: Technical Innovations, Operational and Institutional, Talent Management and Community Outreach.

Continued on page 3

## In This Issue

- 2 ... Straight from the Director
- 2 ..... Glenn Experiments Fly
- 5 ..... Women@NASA
- 5 ..... Traveling Librarian
- 8 ..... Kalahari Laboratory

Continued on page 3



## Why I Blog

I'd like to focus this month's column on our new interactive website for employees called Ray's Blog. I started this internal blog several months ago and it seems to be building a head of steam. I will offer that the site's increase in traffic is not an inconsequential activity. Some days I enter multiple comments and answers, and on other days, I'll blog during nonduty hours.

I started the blog for one reason, which is to provide the employees at Glenn Research Center an opportunity to interact with me in a way that is safe and hopefully useful. I will offer that I also have a selfish reason to write a blog. I want Glenn to be the best place

to work, not only in Ohio, not only in NASA, but the BEST PLACE TO WORK.

I am committed to meeting this objective and cannot do it on my own.

I know there are real issues out there, and they have to be somewhat deeper than the questions and comments I have gotten thus far. Please know I want you to share your thoughts and concerns with me. I believe I have been true to what I said when I started the blog—there is no question that is off-limits, and there is no retribution for giving an opinion that



*Center Director Lugo*

differs from mine. I have received some questions and comments that I may not agree with; however, as long as the discussions are not profane, threatening or unprofessional, we can work through anything. To say it another way, we have done the warmup laps on the blog...so let's get this thing going.

On a similar note, my sense is that most of the problems we deal with at work are issues of trust. But they are also issues that, for the most part, are in our past. To get beyond these hurdles, I am asking you for a favor. If I or any member of the staff does something that "violates the basic tenets of trust and integrity," I need you to let me know about it.

I hope this note finds you well, and I hope that we can build the trust we need to make my dream come true.

## Space Shuttle Discovery Carried Glenn Experiments on Historic Mission

### *Glenn Technology Aboard International Space Station*

When Space Shuttle Discovery traveled to the International Space Station on its final mission, STS-133, it carried aboard several NASA Glenn experiments and hardware. The mission launched on Feb. 24 and returned home on March 9.

The following Glenn-related experiments and hardware traveled to the station during this 39th flight of NASA's most flown shuttle:

- Microheater Array Boiling Experiment
- Nucleate Pool Boiling eXperiment
- Binary Colloidal Alloy Test-6 Experiment
- Light Microscopy Module-Biological Technical Demonstration
- Preliminary Advanced Colloids Experiment-2, or PACE-2
- Flame Extinguishment Experiment-2
- Structure and Liftoff in Combustion Experiment
- Burning and Suppression of Solids Experiment

For details on the experiments, visit [http://www.nasa.gov/centers/glenn/news/pressrel/2011/11-010\\_shuttle.html](http://www.nasa.gov/centers/glenn/news/pressrel/2011/11-010_shuttle.html).

For information about experiments that Glenn is or will be conducting aboard space station, visit <http://issresearchproject.grc.nasa.gov/>.



### **Glenn Helps Resolve External Tank Issues**

The STS-133 first launch attempt on Nov. 5, 2010, was scrubbed because of a gaseous hydrogen leak at the external fuel tank's ground umbilical carrier plate.

Using stereo photogrammetric techniques, Glenn's Matt Melis, Duane Revilock and Chuck Ruggeri, Structures and Dynamics Branch, generated significant data on structural and thermal deformation of the shuttle external tank as it underwent a full tanking test with the cryogenic hydrogen and oxygen propellants. The tests were part of the effort to assist in the investigation into the root cause of the structural cracks discovered on intertank stringers of Discovery's external tank.

# Focus on Aeronautics Research

Continued from page 1

requirements, representing research, advocating and negotiating for support, and communicating between the center and its customers. Pérez-Davis previously served as chief of the Project Liaison and Integration Office.

“For the past 10 years, aeronautics was united with space programs as a homogenous organization under the Programs and Projects Directorate and later on under the Research and Technology Directorate—sharing resources for cross-training and work readiness in support of the agency’s Vision for Space Exploration,” Pérez-Davis explained. “Establishing an ARO brings greater visibility to Glenn capabilities in aeronautics and project support to ARMD.”

Pérez-Davis also noted that the President’s fiscal year 2012 proposed budget supports NASA’s existing portfolio of research and the timely development of next generation (N+3) transportation systems (i.e., three generations beyond current state-of-the-art aircraft). ARMD focuses on five programs: Fundamental Aeronautics Program, Aviation Safety Program, Airspace Systems Program, Aeronautics Test Program and Integrated Systems Research Program.



Dr. Pérez-Davis

## Major Project Responsibility

Today, Glenn is the host center for two major projects and partners on several others across the various ARMD programs.

The Subsonic Fixed Wing (SFW) Project’s primary focus is developing tools and technologies that will dramatically decrease noise and emissions, while increasing performance and fuel efficiency of N+3 vehicles. Dr. Rubén Del Rosario

*Glenn has contracted a Gulfstream G-II aircraft that will be fitted with a suite of instrumentation to fully characterize ice crystal environments.*



Photo by Tom Ratvasky

leads the SFW Project under the Fundamental Aeronautics Program.

The Atmospheric Environment Safety Technologies (AEST) Project focuses on investigating sources of risk and providing technologies needed to help ensure safe flight in and around atmospheric hazards. One research effort will characterize ice crystal weather environments known to have adverse effects on aircraft engines. Dr. Ron Colantonio leads the AEST Project under the Aviation Safety Program.

“Glenn’s new Aeronautics Research Office is committed to continuing the center’s legacy of contributions to the development of a superior, safer and more environmentally friendly U.S. transportation system,” Pérez-Davis said.

To learn more about these and other Glenn aeronautics research topics, visit <http://www.nasa.gov/centers/glenn/aeronautics/index.html>.

—By S. Jenise Veris

## Glenn, Cleveland Clinic Partnership

Continued from page 1

By January, Glenn and Cleveland Clinic teams began taking shape. Barb Garver, Human Capital Development Branch, serves as Glenn’s project manager for the partnership, and facilitates the committee meetings. She attests to the synergy among the team members.

“When you’re sitting in the midst of their discussion and decision making, the energy is amazing,” Garver said.

Gordon is Glenn’s Executive Sponsor for the governance council, which serves as the decision-making body, and thus reviews and approves the infrastructure formulated by each pillar area. Glenn’s Associate Director Bill Wessel, Chief Counsel Bill Sikora and Chief Technologist Dr. Howard Ross also serve on the governance council.

The Community Outreach Committee will be conducting its first program next month: National Lab Day. This nationwide initiative in May brings discovery-based science experiences to students. Glenn and Cleveland Clinic technical experts will visit schools in Northeastern Ohio with a focus on Cleveland Metropolitan and East Cleveland school districts. Students will come to NASA Glenn on May 19 for a culminating activity. Other programs planned by this committee focus on internships, summer camp and employee exchange.

“The Glenn and Cleveland Clinic partnership is about relationship building with our neighbors, and making our workplace and community the best it can be,” Gordon said. “The best collaborations occur when people work together for the common good.”

—By Doreen B. Zudell



## News and Events

### Blacks in the Military >

How did the African-American troops in the Union army affect change during the Civil War compared to the Tuskegee Airmen during WWII? Glenn employees discovered the answers at the 2011 Black History Month Observance held Feb. 22. Guest speaker Dr. Leonne Hudson, Kent State University associate professor of History, provided insight to the Civil War period. Pictured above, left to right: Equal Opportunity Officer Renee Batts, Hudson and Center Director Ray Lugo. The event cosponsors, African Heritage Advisory Group and Black Women's Advisory Group, assembled highlights of the Tuskegee Airmen in a presentation honoring James Travis Sr., a local member and father of NASA retiree James Travis Jr. The program also featured the Cleveland Metropolitan School District All-City Choir (pictured, right bottom).



C-2011-544



C-2011-526

Photos by Bridget Caswell



Photo courtesy of G2G Consulting

### Plum Brook Hosts JAXA Visitors ~

Representatives of the Japanese Aeronautics Exploration Agency (JAXA) visited Plum Brook Station (PBS) and Lewis Field on Feb. 28 and Mar. 1. PBS Director David Stringer and staff gave a tour of facilities. Pictured at the Spacecraft Propulsion Research Facility, left to right: Stringer, Nick Connelly, Bryan Jones, Tani Koichiro, Kevin Ryley, Ryuichi Sekita, Kunio Okada, Hideaki Nanri, Naoki Nagao, Kazuki Mori and Gerald Hill.



Photo by Larry Oppen

### Ohio Aerospace Day ^

Center Director Ray Lugo participated in the 2011 Ohio Aerospace Day, March 10, with aerospace leaders from across the state seeking to maximize the aerospace potential in Ohio today and in the future. Lugo testified at a joint legislative hearing and attended Governor John Kasich's Roundtable at the Ohio State Capitol in Columbus.

### Lunch With the Director >

Employees gathered in the upper level of the Main Cafeteria at Lewis Field to enjoy lunch with Center Director Ray Lugo on Feb. 23. Plum Brook Director David Stringer hosted on March 23. The "Lunch with the Director" monthly series invites employees to eat lunch and talk in an informal setting with a member of Glenn's senior management team on topics such as what's happening at the center, career paths and management philosophies. The next Lunch with the Director will be April 27 from 12 to 1 p.m. with Director of the Facilities and Test Directorate Dr. Rickey Shyne. No RSVP is required—just grab your lunch and pull up a chair!



Photo by Doreen Zudell

## NASA Glenn Earth Day Activities 2011

### A Healthy Earth Makes for a Healthy You

#### Plum Brook Station Celebration

Tuesday, April 12  
Cafeteria/Assembly Area of the Engineering Building  
11:30 a.m. to 1:30 p.m.  
POC: Rosemary Giesser  
419-621-3250

#### Lewis Field Celebration

Thursday, April 14, Cafeteria  
11:30 a.m. to 1:30 p.m.  
POC: Michelle Kenzig  
216-433-3043

#### EARTHfest

##### Cleveland Metroparks Zoo

Sunday, April 17  
10 a.m. to 5 p.m.  
Glenn will be participating as an exhibitor at Earth Day Coalition's EarthFest 2011, Ohio's largest environmental education event and the longest running Earth Day celebration in the nation.  
\$11 for adults, \$8 for kids 2 to 11; under 2 free. Cost includes all zoo exhibits & EarthFest activities or get in FREE by participating in "Walk or Bike for the Earth." FREE RTA shuttles from Public Square to the Zoo are also available.  
POC: Suzanne Aldrich  
216-433-9473

#### Garlic Mustard Pull—Lewis Field

Friday, April 29  
12 to 1 p.m.  
Meet between parking lots of buildings 301 & 302.  
Site of event is West Duct Road.  
POC: Teresa Monaco  
216-433-8293

Many activities are planned during these events. Log onto the website for details: <http://earthday.grc.nasa.gov/calendar2011.html>.

### Check Your Speed!

Speed Limits at Lewis Field  
25 mph unless otherwise posted  
15 mph at gates  
10 mph in parking lots

## Glenn Women Highlighted on Women@NASA

Three Glenn employees were chosen to participate in the agency's new Women@NASA project, which celebrates women's contributions to science and exploration.

Glenn's Dovie Lacy, Educational Programs Office; Jill Noble, Office of Chief Information Officer; and Quynh Giao Nguyen, Structures and Materials Division, are featured on the new Women@NASA website. NASA debuted the website during a Women's History Month event at Headquarters on March 16. NASA Deputy Administrator Lori Garver hosted the event.



Lacy



Nguyen



Noble

Photos by  
Bridget Caswell

The website was developed to encourage more young women to pursue careers in math, science and technology. Through a collection of videos and articles, the Women@NASA project shares the stories of 32 women across the agency that contribute to

NASA's mission in many ways. Glenn's videos were produced onsite by Tracy Sprouse and the crew of Mark Grills, Jim Palaczynski and Quentin Schwinn, WYLE, Imaging Technology Center.

View the videos at <http://women.nasa.gov>.

## Traveling Librarian Comes To You

The NASA Glenn Science and Engineering Library is bringing reference services to your building through the Mobile Librarian project. This project involves the placement of a reference librarian in various buildings for one week-long intervals. There are currently 24 buildings scheduled that will be visited on a rotating basis, followed by an evaluation and reassessment. Additional buildings may be added based on customer interest. The librarians will be equipped with a laptop and various mobile devices, prepared to satisfy your

information needs every afternoon, Monday through Friday from 1 to 3 p.m. While answering questions and serving patrons remains the highest priority for the librarians, they will also be available to demonstrate the many databases, e-books, e-documents and other electronic resources available to the research community. Watch *Today @ Glenn*, the Library website <http://techlib.grc.nasa.gov/> or call the Glenn Science and Engineering Library (216-433-5761) for more details.



### Audible Siren Test at Lewis Field on Saturday, May 7

NASA Glenn's outdoor mass notification and public address system will be tested on Saturday, May 7 between 9 a.m. and 4 p.m. at Lewis Field. During this time, seven sirens will be turned on and off individually during the course of the day. A number of prerecorded voice messages will also be tested and may be heard on or around Glenn. While the warning system is meant to alert center employees in the event of an emergency, the sounds may be audible in the neighborhoods surrounding the center. This live test will ensure the working functionality of Glenn's emergency notification system and the center's ability to notify employees of an emergency. For questions about this testing, call Seth Harbaugh, 216-433-6332 or Jeffrey Scott, 216-433-5605



## Promotions, Honors and Awards



Washington



Ceh



Easterling



Lacy

Prentice Washington has been selected for a 1-year detail as the Acting Deputy Chief Information Officer in the Office of the Chief Information Officer. Washington joins Glenn from NASA Kennedy where he is the Technical Assistant/Project Engineer for the Ground Systems Project Office in the Constellation Project Office. He previously served as the lead Engineering Service Representative in the End User Services Office of Kennedy's Information Technology and Communications Services Directorate, and as the Special Assistant to the Deputy Center Director.

Helen Ceh has been selected Administrative Officer in the Space Flight Systems Directorate. Ceh previously provided support concurrently to the Director of Plum Brook Station, the Strategic Management Office and the Senior Technical Advisor for the Aeronautics Research Mission Directorate.

Donald Easterling, a professional engineer and geologist with over 30 years of environmental experience, has been appointed Environmental Program manager, Safety, Health and Environmental Division. He will be responsible for program oversight and compliance at Lewis Field and Plum Brook Station. Easterling previously served as a restoration manager at Glenn and NASA Kennedy Space Center, in addition to providing technical support to the Office of Strategic Infrastructure at Headquarters.

Dovie Lacy has been selected chief of the Educational Programs Office (EPO), External Programs Division. Lacy previously served as the EPO acting deputy chief and the project manager of NASA's Science, Engineering, Mathematics and Aerospace Academy, managed by Glenn. More recently, Lacy worked at Headquarters leading one of the Administrator's educational priorities, the Summer of Innovation project.



C-2011-566

Photo by Marvin Smith

### Officer Recognized

Center Director Ray Lugo presented the NASA Life Saving Award to Officer Arthur Brown, Knight Protective Services (KPSI), Office of Protective Services, on March 8. NASA trained

*Left to right: Mike Bilinovich, chief of the Office of Protective Services; Robyn Gordon, director of Center Operations; Brown; and Center Director Lugo.*

### Are You a Veteran or Family Member of a Veteran?

If so, the Veterans Awareness Committee is hosting a Veterans Information Forum at Glenn on May 2 from 10:30 a.m. to 1:00 p.m. The event includes an informative panel and booths to provide information on several topics pertinent to military veterans. Information booths will be open before and after the panel discussion. A panel discussion, followed by a question and answer session, is scheduled from 11 a.m. to noon in the Main Cafeteria. Retirees are invited and should confirm their attendance with Gloria Richards, 216-433-5395.

and certified Medical First Responder, recently assisted an unconscious driver, whose vehicle crashed, by administering to the victim for 11 minutes until an EMS team arrived. Brown, who was off-duty at the time, ensured that the victim continued to breathe and her condition did not deteriorate. He also received an KPSI award for being alert to a truck driver who tried to enter the center without proper credentials.

### Best Paper



Photo by S. Jenise Veris

*Left to right: Drs. Gabb, Smialek, Nathal and MacKay.*

Drs. Rebecca MacKay, Timothy Gabb, James Smialek and Michael Nathal are the recipients of the 2010 TMS (The Minerals, Metals, & Materials Society) Structural Materials Division Best Paper Award. The four researchers from Glenn's Structures and Materials Division co-authored the paper, "A New Approach of Designing Superalloys for Low Density," which was selected out of approximately 50 leading-edge research papers published in the *Journal of Materials* in 2010. The presentation was made at the 140th TMS Annual Meeting in San Diego, Calif., March 1.

### Asian Engineer of the Year

Dr. Meng-Sing Liou, senior technologist for Airbreathing Propulsion Computational Analysis, has received the prestigious Asian American Engineer of the Year Award presented by the



Dr. Liou

Chinese Institute of Engineers-USA on Feb. 26. The award recognizes and celebrates outstanding Asian American professionals in STEM-related careers for leadership, inventions and innovation in their respective fields of current or potential global impact.



## Calendar

**IFPTELOCAL 28, LESA MEETING:** LESA will hold its next membership meeting on Wednesday, April 13 at noon in the Small Dining Room of the Employee Center.

**YURI'S NIGHT 2011:** The Developing Professionals Club at Glenn and the Nature League at the Cleveland Museum of Natural History (CMNH) will host Yuri's Night 2011 at the CMNH, April 15, from 7 p.m. to 12 a.m. POC: Stacey Bagg, 216-433-3792.

**EXCHANGE STORE AT PLUM BROOK:** The NASA Exchange Store will be selling space-related items (cash or check only) at Plum Brook Station on Monday and Tuesday, April 18 and 19 in the Engineering Building, Conference Room 141.

**NATIONAL DAY OF PRAYER:** The NASA Glenn Prayer Group invites all members of the Glenn community to join them for a Christian observance on Thursday, May 5 at 7:30 a.m. and 11:30 a.m. See *Today@Glenn* for details. POC: John DeLaat, 216-433-3744.

**PUBLIC TOURS SCHEDULED:** General public tours of Glenn's premier facilities take place on the first and third Saturday of each month. May tours include Green Lab Research Facility, May 7, and Zero Gravity Facility, May 21. Tours are free, available to U.S. citizens and foreign national students in grades K-12.

**Glenn's Emergency and Inclement Weather Line:**  
**Lewis Field: 216-433-9328 (WEAT)**  
**Plum Brook Station: 419-621-3333**

### Deadlines

News items and brief announcements for publication in the May issue is noon, April 22. Larger articles require at least one month notice.

**READ US ON THE INTERNET:**

<http://aerospacefrontiers.grc.nasa.gov>

Hermes  
Award  
2009-  
2010



Reservations are required. POC: Brenda Morgan, 216-433-3156.

**2011 ASIAN PACIFIC AMERICAN HERITAGE EVENT:** This year's event will be held on Friday, May 13, from 10 a.m. to noon in the Administration Building Auditorium. "Diversity, Leadership, Empowerment and Beyond" is this year's theme. Cleveland Postmaster W. Spencer Hsu will be the keynote speaker. Cultural performances of Hawaii and China will be featured. A wide variety of food samplings will be available after the performances. POC: Fran Lawas-Grodek, 216-433-5052.

**RETIRED NASA WOMEN'S LUNCHEON:** Thursday, May 19 at 11:30 a.m. (NOTE time change) at the Colony Dining Room, 120 E. Grand St., Berea (located in the Baldwin-Wallace University Student Union Building). Please call Gerry Ziemba 330-273-4850 or e-mail [gto64gerry@yahoo.com](mailto:gto64gerry@yahoo.com) for reservations (no credit cards).



## In Memory



*Brown*

William F. Brown, Jr., 88, who retired in 1980 with 32 years of NASA service, died on Sept. 6, 2010. Brown was a pioneer in fracture mechanics research, often introduced as the "Father of Fracture Mechanics" at scientific/technical meetings. As chief of the Fractures Branch, Materials Division, Brown guided NASA materials and fracture research programs and authored or coauthored over 100 technical papers. After retiring, Brown served as a Glenn distinguished research associate (DRA) and consulted on several high-profile NASA collaborations including the Department of Energy/NASA large wind turbine blade designs and astronaut transport for the Apollo-Soyuz Project. Brown earned a NASA Exceptional Scientific Achievement medal (1969) for introducing fracture mechanics analysis into the Apollo Program, as well as numerous other NASA and technical society awards.



*Piltch*

Nancy D. Piltch, 61, who retired in 2005 with 22 years of NASA service, died March 8. Piltch was an outstanding chemist, environmentalist and mentor, who frequently shared her passion for NASA and the wonder of science through agency and personal outreach. She began her NASA career working in optical measurement systems, but in later years focused on oxygen sensors for combustion space experiments. Piltch was co-investigator for the award-winning portable device to measure human metabolic activity, known as PUMA (Portable Unit for Metabolic Analysis) and continued consulting in retirement with a patent pending. For years, a dedicated bicycle commuter, Piltch promoted bike safety and the center's annual "Bike to Work Day," in addition to volunteering for the Cuyahoga Valley National Park's Bike and Hike Patrol and wildlife surveys.

Jesse L. Strickland, 87, who retired with 33 years of NASA service, died Feb. 18. Strickland was an Army Air Corps veteran of WWII, who graduated from Case Western Reserve University in architecture before joining NASA Lewis in the early 1950s. He rose through the ranks to become chief architect and led Lewis's Facilities Improvement Program, from remodeling the Guerin House to designing Plum Brook Station's nuclear facilities. He also designed hospitals in India and Africa on behalf of NASA. Strickland eagerly mentored center employees and led several Lewis community outreach efforts, such as project coordinator for renovation of Camp Cuyahoga for underprivileged children and coordinator of Lewis's career guidance counselors for the Cleveland Schools' work-study program.



*Strickland*

## National Aeronautics and Space Administration

### John H. Glenn Research Center at Lewis Field

21000 Brookpark Road

Cleveland, Ohio 44135

[www.nasa.gov](http://www.nasa.gov)

*AeroSpace Frontiers* is an official publication of Glenn Research Center, National Aeronautics and Space Administration. It is published the second Friday of each month by the Community and Media Relations Office in the interest of the Glenn workforce, retirees, government officials, business leaders and the general public. View us online at <http://aerospacefrontiers.grc.nasa.gov>. Submit contributions via e-mail to the editor: [doreen.b.zudell@nasa.gov](mailto:doreen.b.zudell@nasa.gov) or 216-433-5317.

Editor: **Doreen B. Zudell**, SGT, Inc.

Assistant Editor: **S. Jenise Veris**, SGT, Inc.

Managing Editor: **Kelly R. DiFrancesco**



VOLUME 13 ISSUE 4 APRIL 2011

## Glenn and Kalahari Partner in Math and Science Day

### Students Didn't Even Get Wet

When you think of the Kalahari Waterpark Resort in Sandusky, what images come to mind? Waterslides, palm trees, fruit drinks, math and science?

On Feb. 23, Glenn's Plum Brook Station (PBS) and Kalahari Resorts partnered to provide an opportunity for middle school age students to learn about science through hands-on activities in the Kalahari meeting facilities. About 150 students from six school districts around the Sandusky area participated in the inaugural Math and Science Day.

Astronaut Mike Foreman, who heads Glenn's External Programs Division, welcomed the students and shared some of his space travel experiences with them. Afterward, Glenn researchers, operations engineers and cryogenic fluid and vacuum systems specialists commanded 10 different learning stations. Students visited each station to engage in hands-on activities that included space propulsion, planetary science, vacuum environments, mechanical resonance, cryogenics, microgravity, sound waves and life sciences.

Brian Willis, project lead for PBS's Education and Outreach Team, said the pilot event was so well received, that he hopes to expand the size and geographic scope of a planned December 2011 event.

"A lot of students don't realize what NASA does or why they should consider a technical career," Willis explained. "This event showed them the fundamental aspects of science, technology, engineering and math that not only underpin space exploration, but also day-to-day life."

—By Sandy Nagy and Doreen B. Zudell



Photos by Larry Oppen



*Pictured above, clockwise: Astronaut Mike Foreman answers questions posed by eighth grade students. • Monica Hostler and Dave Pravlik, cryogenic test technicians at the Space Power Facility (SPF), demonstrate the pressure rise that can accompany the rapid increase of volume associated with liquid nitrogen boiling at room temperature by inflating a balloon to the point of bursting. • Aron Hozman, Vibroacoustic Test Systems manager at the SPF, demonstrates the fundamental physics of vibration phenomena.*